

**REMARKS**

The Office Action dated January 29, 2004 has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1, 2, 4 to 8, 10, 12 and 14 to 24 were pending. By this paper, Applicant does not cancel any claims, and adds claims 25-27. Therefore, claims 1, 2, 4 to 8, 10, 12 and 14 to 27 are now pending in the present application.

Applicant respectfully submits that the present application is in condition for allowance for the reasons that follow.

**Withdrawal of the Prior Grounds of Rejection**

Applicant thanks Examiner Tran for withdrawing the prior grounds of rejection and for extending the courtesy to Applicant's representative of an in-person interview after a final rejection. (The interview was not necessary because of the withdrawal of the prior grounds of rejection.)

**Claim Rejections Under 35 U.S.C. §103(a)**

In the Office Action, Claims 1, 2, 4-7, 10, 12, 14-17 and 20-24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Retallick (USP 4,597,262), with claim 8 being rejected under the same statute in view of the combination of Retallick and Shinazawa (USP 4,567,725). Claims 18 and 19 are rejected in view of Retallick and design choice. Applicants respectfully traverse the rejection as to the claims above, and submit that these claims are allowable for at least the following reasons.

Applicants rely on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that none of the criteria of MPEP § 2143 have been met in the Office Action.

The Cited References Do Not Suggest All Claim Recitations

Even if the first and second requirements of MPEP § 2143 was satisfied in the Office Action (which they are not, as explained below), the cited references still do not meet the third requirement, which is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

Each of the independent claims (claims 1, 2 and 20) either recite the use of a “surface combustion burner membrane.” In an exemplary embodiment according to the inventions of claims 1, 2 and 20, after filtered particulate matter builds up, premixed diesel and air burns on the *surface* of a fiber web after ignition beyond the web to burn away the particulate matter on the web. The flame that burns the particulate matter during this regeneration period is present on the *surface* of the web.

In contrast, the regeneration mode of the filters of the Retallick reference utilize internal burning inside a converter medium, and thus the converters of Retallick are clearly not surface combustion burner membranes. Retallick teaches that exhaust gas flows through a converter made from metal strips 3 having indentations 5 that are stacked horizontally next to each other, the metal strips 3 having a staggered arrangement of indentations 5. (See Retallick at col. 3, lines 46-63.) Figs. 1 and 2 show the path of the exhaust gas as the gas flows through the converter. The filtered particulate matter in Retallick builds up on the inside of the converter, not on a surface of the converter: “In this way, the particulates are distributed throughout the entire converter so that the pressure drop does not build up rapidly. This is an essential feature of the invention.” (Retallick, col. 4, lines 3-6.) Retallick further teaches that when “the apparatus measures the pressure drop to be above a certain level,

indicating that the converter is so filled, fuel is injected into the exhaust gas so raise the temperature in the converter sufficiently to burn the particulates.” (Retallick, col. 2, lines 37-40, emphasis added.) Thus, the combustion occurs inside the converter of Retallick, and, therefore, Retallick fails to teach a “surface combustion burner membrane.”

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All of the claims recite the use of fiber webs. Retallick does not disclose or suggest the use of fiber webs. In Retallick, the converters are made from a “stack of individual metal strips,” or, alternately, a folded “single strip of metal.” (Retallick, col. 4, lines 49-56.) As shown in Figs. 1 and 2 and explained at col. 4, lines 40-46 of Retallick, the metal strips are stacked horizontally in a row, much like the open louver of an in-wall-mounted exhaust fan when the fan is running (where the louvers pivot downward about 80 degrees once the fan is shut off to close the exhaust passageway from the outside). Such a configuration is not a “fiber web.” Therefore, yet another recitation of the claims is not found in Retallick.

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Also, independent claims 1 and 2 and (dependent claim 21) recite stainless steel fiber web filters. The Office Action asserts that the background section of Retallick “suggests the use of stainless steel fiber webs for the fiber web.” (Office Action, page 2, last sentence.) Assuming *arguendo* that Retallick teaches a fiber web, Retallic decidedly teaches away from the use of stainless steel: “The stainless steel collapsed when it was heated by the burning particulates.” (Retallic, col. 1, lines 41-44.) That is, the mention of stainless steel in Retallic is to provide an example of a converter that does not work, which is why, according to Retallick, his device and methods are advantageous over the prior art. Thus, Retallic teaches away from the use of a stainless steel fiber web.

In sum, even if the other requirements of MPEP § 2143 are satisfied (which they are not, as explained below), the third requirement of MPEP § 2143 is not satisfied in the Office

Action, since the cited references do not teach each and every element of the present invention. Thus, the present claims are allowable.

Lack of a Reasonable Expectation of Success

MPEP § 2143.02 permits references to be modified or combined to reject a claim as obvious only if there is a reasonable expectation of success. There is no evidence in the references, and certainly none identified in the Office Action, that one of ordinary skill in the art would have a reasonable expectation of success in achieving Applicants' invention by modifying the filter of Retallick to utilize a stainless steel fiber web. Indeed, the Retallick reference provides evidence that the skilled artisan would not have had a reasonable expectation of success in using a stainless steel fiber web. As noted above, Retallick identifies the use of stainless steel as an example of a converter design that is a failure. Thus, one of ordinary skill in the art would not have seen the proffered modification of Retallick as producing a successful regenerating filter. Because of this, the second criteria of MPEP § 2143 has not been met in the Office Action, and a *prima facie* case of obviousness has therefore not been established. The claims are thus allowable.

Lack of Suggestion or Motivation to Modify or Combine the References

In regard to a suggestion or motivation to modify a reference, MPEP § 2143.01, subsection 6 states that “the proposed modification cannot change the principle of operation of a reference – If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959).” In *Ratti*, the CCPA held that the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in the primary reference.” This substantial redesign would have resulted in changing a rigid seal to a resilient seal. Thus, a reference cannot be modified to render an invention obvious if the

modification changes the principle of operation of the reference, even if that modification is workable or easily implemented.

With the above in mind, it is respectfully submitted that since Retallic teaches combustion internal to the converter during a regeneration period and fails to teach surface surface combustion during a regeneration period, substituting surface combustion for internal combustion would change the principle of operation of Retallic. Since modifying Retallic to utilize surface combustion changes the principle of operation of Retallic, “the teachings of [Retallic] are not sufficient to render the claims *prima facie* obvious.”

In summary, because of the lack of a proper suggestion or motivation in the prior art to modify the Retallic reference, the first requirement of MPEP § 2143 has not been met and, hence, a *prima facie* case of obviousness has not been established, and therefore, the claims are allowable.

### Rejection of Claims 8, 18 and 19

Claim 8 stands rejected in view of Retallick as applied to claim 4 when combined with Shinzawa. Applicants respectfully submit that Shinzawa fails to remedy the deficiencies of Retallick outlined above, and, therefore, claim 8 is allowable for the pertinent reasons that make claim 1 allowable. Claims 18 and 19 are allowable because design choice does not remedy the deficiencies of Retallick. Therefore, these claims are allowable.

### New Claims

As seen above, claims 25-27 have been added. These claims are allowable for at least the reason that they depend from allowable claims, and for the additional reason that the claims recite that the fiber web is of a Fe-Cr-Al alloy, which is likewise not taught in the cited references. Entry and allowance is respectfully requested.

**Conclusion**

Applicant believes that the present application is now in condition for allowance.  
Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Tran is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

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Respectfully submitted,

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